



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/681,332	10/09/2003	Matthias Boltze	008388-8	3375
25570	7590	04/14/2006		EXAMINER
ROBERTS, MLOTKOWSKI & HOBBS P. O. BOX 10064 MCLEAN, VA 22102-8064			KALAFUT, STEPHEN J	
			ART UNIT	PAPER NUMBER
			1745	

DATE MAILED: 04/14/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Cr

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/681,332	BOLTZE, MATTHIAS	
	<b>Examiner</b> Stephen J. Kalafut	<b>Art Unit</b> 1745	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is **FINAL**.                    2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-8 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-8 is/are rejected.
- 7) Claim(s) \_\_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 09 October 2003 is/are: a) accepted or b) objected to by the Examiner.  
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)	5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)
3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>09 October 2006</u> .	6) <input type="checkbox"/> Other: _____ .

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1 and 5 are rejected under 35 U.S.C. 102(e) as being anticipated by Sahoda *et al.* (US 6,706,438).

Sahoda *et al.* disclose a fuel cell system comprising a fuel cell arrangement (11) and an injector (30) for returning the fuel cell exhaust to the fuel cell, the injector including a fuel inlet opening (32), a following nozzle (43), a following diffuser (39) having an outlet opening (37), a chamber (35) between the nozzle and the entry to the diffuser, an intake opening (36) for anode exhaust, and a needle (33) within the chamber adjacent the entry of the diffuser. The needle is attached to a movable shaft (45) and thus slides therewith (column 8, lines 24-39). This action varies the flow rate for the incoming fluid (column 4, lines 11-15), which would involve moving the sliding needle to intermediate positions that alter the diffuser geometry, and may interrupt the flow of fluid coming through one input (column 5, lines 20-28).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahoda *et al.* in view of Kunz *et al.* (US 5,213,912).

These claims differ from Sahoda *et al.* by reciting a reformer into which a mixture of fresh and recycled fuel is sent via the injector. Kunz *et al.* discloses a fuel cell system in which part (16) of the anode exhaust (19) is recycled back in the fuel cell via a reformer (5). Thus, fresh unreformed fuel (1) is mixed with unreacted hydrogen. Because this would allow some unreacted fuel to be reused, and allow water in the exhaust to be used in the reformer (column 3, lines 54-59), it would be obvious to include a reformer as shown by Kunz *et al.* between the injector and fuel cell of Sahoda *et al.*

Claims 3 and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahoda *et al.* in view of Matsuda *et al.* (US 6,472,092).

These claims differ from Sahoda *et al.* by reciting that the input opening is connected to a burner, to which the incoming fuel may be diverted by the slide. Matsuda *et al.* disclose a fuel cell system in which incoming hydrogen may be diverted from the fuel cell into a burner, which would be useful for heating during startup (column 3, lines 44-56). For this reason, and because the burner would be able to dispose of any unwanted hydrogen, it would be obvious to connect a burner as disclosed by Matsuda *et al.* to the fuel input of the injector or Sahoda *et al.*

Claims 4 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sahoda *et al.* in view of Kunz *et al.* as applied to claims 2 and 6 above, and further in view of Matsuda *et al.*

Matsuda *et al.* is applied to these claims for the same reasons as to claims 3 and 7. It would be obvious to connect a burner as disclosed by Matsuda *et al.* to the fuel input of the injector or Sahoda *et al.*, where a reformer is connected between the injector and fuel cell as taught by Kunz *et al.*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Clawson *et al.* (US 6,921,595) disclose a fuel cell with a reformer and a burner.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Stephen J. Kalafut whose telephone number is 571-272-1286. The examiner can normally be reached on Mon-Fri 8:00 am-4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick J. Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1745

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

sjk

  
OZIPLENE KALAFUT  
PRIMARY EXAMINER  
GROUP 1700